

# Department of Health and Human Services

Maine People Living Safe, Healthy and Productive Lives

# State of Maine Department of Health and Human Services (DHHS) Office of MaineCare Services Office of the State Coordinator for Health Information Technology

# State Health Information Exchange Cooperative Agreement Evaluation Report

Version 1.0 April 14, 2014

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#### 1 INTRODUCTION

The success of Health Information Technology (HIT) in Maine has been predicated on the perspective that HIT is not an end but a means to support progress toward higher quality health care which flows from integrated, coordinated, and efficient technology advancements. As such, the strategies taken to support adoption of Health Information Technology in Maine have and continue to focus on bringing together all stakeholders to leverage experience, resources, and the benefits of new technology.

The State Health Information Exchange (HIE) Cooperative Agreement Program funded states' efforts to rapidly build capacity for exchanging health information across the health care system both within and across states. In February 2010, the Office of the National Coordinator for Health Information Technology (ONC) awarded State HIE Cooperative Agreement Program funds to the State of Maine in the form of a four-year cooperative agreement through February 7, 2014. The Maine program is housed in the Office of the State Coordinator for Health Information Technology (OSC) in the Office of MaineCare Services under the Maine Department of Health and Human Services.

The vision for Health Information Exchange in Maine is to preserve and improve the health of the people of Maine, which requires a transformed patient-centered health system that uses highly secure, integrated electronic health information systems to advance access, safety, quality, and cost efficiency in the care of individual patients and populations. The Program's efforts to advance Health Information Exchange are carried out in the context of the Statewide HIT plan approved by the ONC in 2010 (http://www.maine.gov/hit/documents/sop2010.pdf).

This State-level program evaluation of Maine's Office of the State Coordinator for Health Information Technology, including the Health Information Exchange Cooperative Agreement Program was conducted under a July 2013 ONC approved evaluation template, the requirements of which are established by law.<sup>1</sup>

The core and primary objective of the ONC required evaluation is a discussion of health information exchange and the status of health information technology under the Cooperative Agreement. It is essentially a review of OSC activities from February 2010 through February 2014. As such, the State anticipates a phase two process which will look to the future, and with full stakeholder involvement, develop and implement HIT efforts for the future.

<sup>&</sup>lt;sup>1</sup> This evaluation was conducted by HealthTech Solutions, LLC (HTS) located in Frankfort, KY, which supports state government agencies and other public sector entities in developing state-of-the art eHealth solutions.



#### 2 HEALTH INFORMATION EXCHANGE IN MAINE OVERVIEW

The Office of the State Coordinator for Health Information Technology, is advised by a Health Information Technology Steering Committee (HITSC) and standing sub-committees. Under the guidance of HITSC, OSC has established an approach that encourages the broadest development of Health Information Exchange across the state of Maine. OSC provides the resources, policy support and convening needed to advance Health Information Exchange and to ensure that every provider has affordable exchange options. (See <a href="http://www.maine.gov/hit/ld\_1818/index.html">http://www.maine.gov/hit/lwg/index.html</a>.)

The State of Maine has unique demographic characteristics. In 2012, the estimated population in Maine stood at 1,329,192, with 549,720, or over 41% of these living in rural areas. The majority of the population is concentrated in Southern and Eastern Maine, where four of the five most populated cities or towns in the state are located. Statistics measuring the percent of population aged 65 and older, rank Maine as the 4th oldest state in the nation, with projections to reach the 2nd oldest state before 2020. Data provided by the VA Office of Rural Health show that 12.8% of Maine residents are veterans, the fifth highest per capita population in the country. These demographics present unique challenges to the healthcare system.

#### 3 PROGRESS IN HEALTH INFORMATION EXCHANGE

Since 2004, Maine has moved forward with an ambitious plan of promoting the adoption of Electronic Health Records (EHR), establishing one of the nation's first operational statewide electronic Health Information Exchanges (HIE), and bringing an ever-widening array of providers into the exchange and thus improving the coordination, integration and quality of patient care.

An earlier Maine Health Information Network Technology demonstration project led to the creation on one of the first public/private not-for-profit health information exchange organizations in the nation – HealthInfoNet, which went live in early 2009 with over 50% of the care activity in the State represented by the first participants. This early success with HIE resulted in a 2010 Executive Order, which recognized the Office of the State Coordinator for HIT, and which designated HealthInfoNet (HIN) as the state-wide State-Designated HIE Organization. This made HIN the primary sole source for HIE implementation partner under the Cooperative Agreement Grant from ONC.

By mid-2010, 56 percent of the population was part of the exchange system. In that same year, HIN was awarded the statewide Regional Extension Center grant funded by the ONC through the HITECH Act. In addition, HIN became the primary HIE implementation partner with Eastern Maine Healthcare Systems on the Bangor Beacon Community grant.

During 2013, Maine was one of only six states to receive funding from the Centers for Medicare



and Medicaid Innovation to implement their State Health Care Innovation Plans, designed to use all of the levers available to transform the health care delivery system through multi-payer payment reform and other state-led initiatives. The Maine Health Management Coalition, HIN and Maine Quality Counts are key partners to the SIM grant. In addition, HIN is working with the Health Resources and Services Administration (HRSA) to connect the Veteran's Administration to the HIE.

In addition to HIN, there are complimentary nascent initiatives in health information exchange between non-affiliated entities within the State of Maine. This consists of one large IDN interconnecting with referring provider organizations and several Accountable Care Organizations. These organizations are private organizations and no public data are available concerning the breadth and characteristics of health information exchanged. They are also small initiatives. Hence this Evaluation focused on HIN and effectively measures the vast majority of clinical health information exchanged in Maine where Health Information Exchange Cooperative Agreement Funds were used.

#### 3.1 Health Information Exchange Strategies

Robust and ubiquitous health information exchange is central to the State's HIT strategy. At the spearhead of the coordination efforts are the OSC, the MaineCare Meaningful Use HIT Program and HIN. These entities are themselves subject to oversight from a broad array of stakeholders across the State; the OSC and the MaineCare Meaningful Use Programs are also answerable to the legislature, executive branch and the public as State agencies.

The strategy of the OSC is to encourage the broadest development of health information exchange across the State. This includes coordination of initiatives and developing a context for the sustainability of health information exchange and the meaningful use of health information technology. Within this context, HIN was selected as the designated state health information exchange.

As described, HIN is a highly successful HIE organization and provides a robust network connecting all hospitals within the State and enables almost all the clinical health information exchanged between non-affiliated stakeholders. To support its health information exchange activities, HIN employs an operating strategy that allows for the management of a secure electronic system where healthcare providers share patient health information including allergies, prescriptions, medical conditions, and lab and test results to better coordinate and improve patient care. The exchange includes data on all patients regardless of payment source: commercially insured, uninsured, publicly insured, and underinsured patients are all in the database.

Participating providers submit patient data to the exchange on a real-time basis, where it is housed in a Statewide data repository organized by a master patient index linking patients across multiple health care settings. Identifying and linking the right patient is a challenging and



essential component of the success of the exchange. Finally, HIN standardizes the data across sites to guarantee that the statewide data means the same thing to all providers accessing the exchange and that the aggregated database can be analyzed across provider organizations and regions of the State.

Central to HIN's strategy has been a longstanding priority to support the collaborative engagement of providers from both the behavioral and physical health sectors, and of consumers, so that the use and level of deployment of HIT enhances care at both the patient and provider level.

- The opt-out strategy for patient consent for general medical data sharing was adopted, resulting in over 88% of Maine's population, 1,307,767 individuals, with records in the HIE
- Only 14,635 individuals have opted out since 2009 (1.1%)

Alongside the opt-out consent policy, in 2011, Maine passed legislation, LD 1331 (An Act to Increase Health Care Quality through the Promotion of Health Information Exchange and the Protection of Patient Privacy, 2011) that allows patients to opt-in for the electronic sharing of sensitive data (mental health and HIV). Patients with these sensitive conditions have to actively take action to authorize access of their mental health and HIV data through the exchange (view). The HIE may take in mental health and HIV data, but legislation requires HIN to sequester this information until a patient provides consent to have it made available to support patient care coordination. Currently, the HIE does not include substance abuse data. Many stakeholders, including the State and HIN would like to explore options for substance abuse data.

In the drive to create significant value for HIN clients, the build out of a data warehouse and the creation of reporting solutions continues to gain momentum. The warehouse incorporates clinical and administrative data from events of care for more than three years of patient encounters from across Maine. There are currently more than 11 million patient encounters incorporated in the database. The warehouse database is updated on a daily basis. This data warehouse allows HIN to provide population-based analytics and risk modeling to current and future clients.

Finally, in November 2012, Maine was recognized as the No. 1 state in the nation for the percentages of eligible professionals who received payments for Adoption, Implementation or Update (AIU) and the first state in the nation to have all of its eligible hospitals participate in the AIU Year 1 of the Medicaid incentive payment program. Maine was recognized as the No. 1 state for the percentage of eligible hospitals and professionals who successfully met year 2 Meaningful Use requirements. The high penetration of EHRs and their meaningful use also is a foundation strategy for supporting health information exchange.

#### 3.2 Data Collection and Analysis to Measure Health Information Exchange

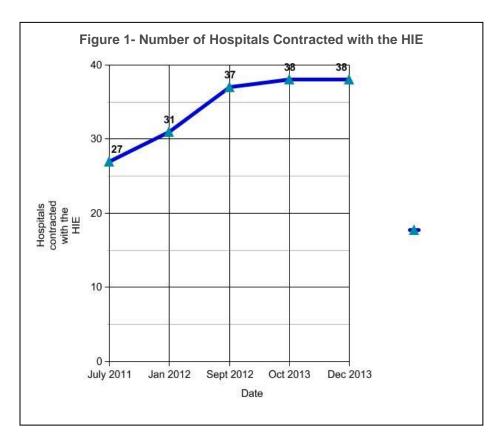
Multiple methodologies were used for effective data collection and analysis. Data were collected from different sources and a comprehensive review of all existing documentation and reports was carried out. This included review of the Report of the LD 1818 Work Group, a working group convened under Resolve Chapter 109 (2011) - Resolve to Evaluate the All Payer Claims



Database of the State- to improve the availability and access to health care data. The Work group consisted of 17 diverse interests and input from more than 90 stakeholders, representing individual customers, payers, insurers, providers, businesses, public and private entities, health care information organizations, and others.

In addition a variety of analytical methods were employed to analyze other available data. This allowed for the triangulation of results and their cross-validation. Furthermore, the collection and analysis of annual program metrics as required by ONC, is included in this evaluation.

#### 3.2.1 Usage metrics



HIN Connection Statistics as of December 30, 2013:

- Connections to:
  - 35 of Maine's 38 Hospitals (all under contract and are at various stages of onboarding)
  - 405 Ambulatory Practices (and increasing)
  - 3 LTC Facilities with 17 additional being onboarded
  - 3 Home Health Agencies
  - 15 FQHCs
  - 22 CAHs



- 74% Patient "Cross Over" Between Corporately Unaligned Provider Organizations
- 1,789 Maine clinicians and support staff have active HIN user accounts
- Over 10,501 clinicians are eligible to access
- 3.5M inbound messages are received by HIN each week
- The Central Data Repository (CDR) is 1.5 TB in size and is growing at 4 GB a day
- Patient accesses up from 1342 in 2010 to 105,944 in 2013

#### 3.2.2 Surveys

Two different surveys were undertaken in 2013 to measure connectivity, use, and attitudes toward the exchange of health information. These studies are summarized below.

#### Broadband and Electronic Health Record (E H R)Survey

The HIT Broadband and EHR survey of health organizations was undertaken in 2013. The results of these surveys of Maine broadband providers and consumers were compared to the findings of the ConnectME Authority's *Broadband Needs Assessment* (2011) to identify areas of recent broadband growth in Maine. As part of the update, health organizations were surveyed using new, expanded online questionnaires developed by a survey team in collaboration with the OSC.

The survey gathered information about the adoption and use of broadband-based health information technology (HIT) and included such applications as the HIN Health Information Exchange (HIN HIE), electronic health records (EHRs), and e-prescribing. The 2013 survey results were based on a sample of 513 healthcare facility locations out of a total number of 3,135 survey recipients, representing a 16.4 percent response rate. The healthcare organizations that participated in this survey included practices with one or multiple locations. In instances where a practice had multiple locations, each facility location was surveyed as a separate entity.

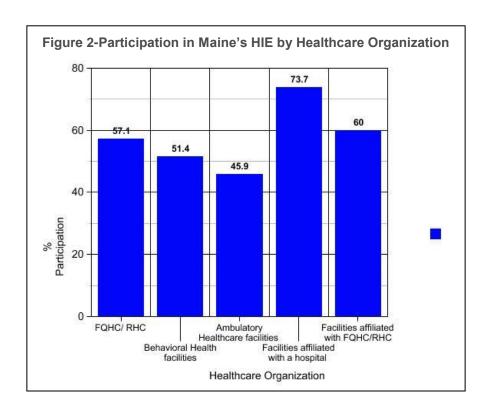
#### Broadband and EHR Survey: Results

The survey sample was comprised of a range of healthcare organizations, from behavioral health facilities (the majority at 52.0%) to long-term care facilities (12.2%), ambulatory healthcare facilities (8.6%), dental facilities (4.9%), federally qualified health centers (FQHCs) or rural health clinics (RHCs) (4.9%), and home health agencies (4.0%). Pediatric care facilities, hospitals, pharmacies and shelters comprised less than 1 percent of the sample. The majority of respondent organizations are practice locations not affiliated with a hospital, FQHC, or RHC (79.6%);15.2 percent are affiliated with a hospital, and 5.2 percent are part of a FQHC or RHC. Over half (64.2%) practice at multiple locations within Maine; 34.7 percent practice at a single location within Maine. Only 1.0 percent of respondents have multiple locations within the US as a whole.

High-capacity broadband connectivity rates are influenced by Maine's HIN HIE's secure, interoperable network for centralizing and sharing healthcare information with healthcare



organizations, providers, public health agencies and consumers statewide. One-third of the 2013 survey respondents are connected. Of those organizations that responded to the survey question, the highest percentage of participation is shown among FQHCs or RHCs (57.1%), behavioral health facilities (51.4%), ambulatory healthcare facilities (45.9%), and those facilities that are affiliated with a hospital (73.7%) or part of an FQHC or RHC (60.0%). See Figure 2: Participation in Maine's HIE.



#### Provider Survey: Methodology

In 2013 HIN undertook a survey of HIE users to understand how and why they use the HIE and what ideas they had for improvements. This online survey was drawn from ambulatory and hospital-based providers participating in the HIE across the State.

#### Provider Survey: Results

The results from the survey mirror those generally found in the e-Health literature. Results relevant to this assessment are summarized below:

- ➤ Benefits reported by users that accessed the HIE at least a few times:
- Reduces time gathering information
- Supports Coordination of Care
- More informed treatment decisions
- Reductions in duplicative testing



- Helps with medication reconciliation
- Provides information when the patient can't or won't
- ➤ 43% of respondents reported they'd used the HIE only a few times or never. Top reasons included:
- Password expired or don't know it
- Don't know how to access or didn't know they had an account
- User feels they haven't needed to access
- Someone else accesses for them
- Too difficult to use
  - > Takeaways from Survey
- For those that use the HIE, it is a valuable tool for care coordination.
- There remains lack of awareness among providers of the HIE, its benefits and the breadth of data it contains.
- Providers are interested in inclusion of new types of providers and new types of data.
- There are different and distinct pockets of use in each organization. One hospital may have highest use in pharmacy, while another may be in the ED.
- Users feel that participant organizations have not had a coordinated approach to training.
- HIE adoption can influenced by local and trusted clinical champions
  - > Important actions taken as a result of the Survey
- Worked with sites to fix technical issues highlighted in the survey
- Set up an automatic password reset function for sites
- Created a Customer Support team and hired a clinical coordinator to help with training and user outreach
- Created more training tools for users
- Continued to expand number and type of sites connected as well as data collected from those sites.

#### 3.2.3 Focus Group

#### Methodology

This evaluation used a focus-group approach. At the HIT Steering Committee Meeting in Augusta, Maine on December 16, 2013, topics for evaluation generated in-depth discussion around areas that are of interest to health information exchange in Maine. Core research objectives for the session were:

- 1. A discussion of health information exchange and the status of health information technology initiatives in Maine through December, 2013.
- 2. The next phase of health information exchange in Maine including sustainability and integration with emerging healthcare models and initiatives.



The group interaction facilitated the gathering of in-depth attitudes, reactions and additional data from a large group of stakeholders at a single meeting. Detailed meeting minutes were developed and circulated to all stakeholders. As mentioned in the introduction section of this report, the State anticipates a second phase of HIT planning and implementation activities for the future.

#### **Summary Findings**

- 1. Stakeholders agreed that substantial progress has occurred in the State since the advent of HITECH funding.
- 2. Coordination and leveraging funding sources: Cooperative Agreement, REC, Workforce Development, Beacon, SAMHSA.
- 3. The strategy of HIN continues to evolve and advance its business model.
  - a. HIN's focus has been a clinician focus
  - b. Continued growth of use and traffic
  - c. Increased data collection and offerings
  - d. Future goal of payer access is seen as critical, initially through Medicaid
  - e. New services such as notifications are high value
  - f. Goal of providing consumer access to the exchange (pilot underway)
  - g. One view was HIEs will be "middle-ware" –essentially trusted party information brokers between providers with alerts and other value added services in addition to CCD.
- 4. Health Information Exchange sustainability
  - a. Current subscription fee schedule in place for HIN, some providers receive subsidies
  - b. One of the very few HIEs collecting subscription fees in the nation
  - c. Value-added services under development
  - d. Data aggregation
- 5. New funding sources
  - a. FCC Healthcare Connect Fund
  - b. Pilot Project for Skilled Nursing Facilities
  - c. Health Home Project
  - d. SIM Grant
  - e. Maine CDC use of health information exchange
    - i. Syndromic Surveillance
    - ii. Registries (Cancer)
- 6. Consider repositioning health information exchange to attract and support payers



- a. MaineCare
- b. CMS funding will require a payer orientation (CMS is a payer)
- c. Commercial payers are an additional source of subscription revenue

#### 4 ONC PROGRAM PRIORITY AREAS

ONC requires the facilitation and expansion of health information exchange in the program priority areas and other areas as appropriate to the State's strategy. All grantees under the State HIE Cooperative Agreement Program are required to track progress for each of the four key core HIE program requirements:

- 1. Laboratories participating in delivering electronic structured lab results
- 2. Pharmacies participating in e-prescribing
- 3. Providers exchanging patient summary of care records
- 4. State health departments electronically receiving immunizations, Syndromic surveillance, and notifiable laboratory results.<sup>2</sup>

In addition to the four stated core areas, states are required to provide their official financial and accounting reports to ONC and OGM, which are due no later than May 7, 2014 or June 18, 2014, depending on the type of expense. As such, this evaluation report does not include the details which will be in the final and official financial and accounting reports.

As of January 27, 2014, the remaining amount available under the cooperative agreement was \$1,358,280.01. Although a portion of the available funding has been or will be used, to pay invoices for services performed through February 7, 2014 or for those specific approved closeout activities as allowed by OGM and ONC, it is fair to say that several projects, the funding of which had been approved by ONC and OGM, were not carried out due to the Cooperative Agreement end on February 7, 2014. Further information and lessons learned will be described in detail in the State's final financial and accounting reports.

<sup>&</sup>lt;sup>2</sup> The ONC requirements for the annual update to the Tracking Program Progress measures were published in Appendix C of ONC-HIE-PIN-002, February 2012. However in a December, 2013 directive ONC amended the required Tracking Program Progress measures in the final report to exclude patient summary of care records and e-prescribing data. These measures have been provided via ONC from third parties. ONC has indicated these measures will be available to grantees at a later point. Thus Tracking Program progress only requires #1 and #4 from the core areas in the 2014 Assessment.



### **4.1 Tracking Program Progress**

**Table 1: Tracking Program Progress** 

	Report in fir	st SOP update	Report Feb 2014	
Program Priority	Status as of December, 2011	Target for December, 2012/13	Status as of January, 2014	Target for December, 2014
1. % of labs sending electronic lab results to providers in a structured format <sup>4</sup>	67%	75%	93%	95%
2. % of labs sending electronic lab results to providers using LOINC	67%	75%	81%	95%
3. Public Health agencies receiving ELR data produced by EHRs or other electronic sources. Data are received using HL7 2.5.1 LOINC and SNOWMED Yes/no or %	1=Yes	1=Yes	1=Yes	1=Yes
4. Immunization registries receiving electronic immunization data produced by EHRs. Data are received in HL7 2.3.1 or 2.5.1 formats using CVX code. Yes/no or %	1=Yes	1=Yes	1=Yes	1=Yes
5. Public Health agencies receiving electronic Syndromic surveillance hospital data produced by EHRs in HL7 2.3.1 or 2.5.1 formats (using CDC reference guide) Yes/no or %	0=No	0=No	0=No	0=No

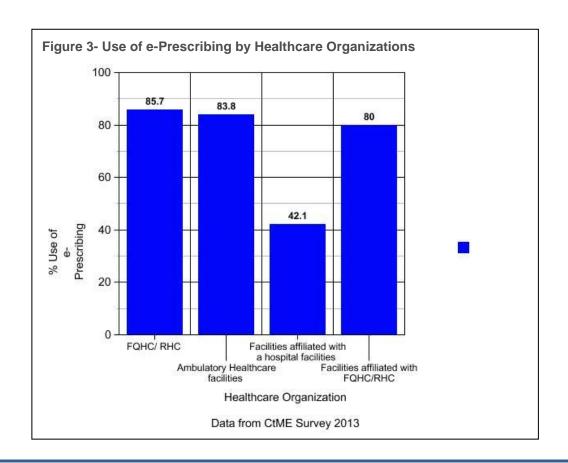


6. Public Health agencies receiving electronic Syndromic surveillance ambulatory data produced by EHRs in HL7 2.3.1 or 2.5.1 Yes/no or %	0=No	0=No	0=No	0=No
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#### 4.1.1 E-prescribing

Although ONC is not requiring the reporting of e-prescribing data in the Tracking Program Progress assessment, the State undertook an assessment of e-prescribing functionality through primary research. The finding is that e-prescribing is largely available for providers through their EHR products or other publically available tools (e.g., web-based solutions).

The results of the 2013 HIT Broadband and EHR Survey of health organizations, demonstrated that the use of e-prescribing is more likely among ambulatory healthcare facilities (83.8%), FQHCs or RHCs (85.7%) or organizations that are part of an FQHC or RHC (80.0%) or affiliated with hospitals (42.1%). See Figure 3- Use of e-Prescribing by Healthcare Organizations.





#### **4.1.2** Structured Lab Results

HealthInfoNet maps the laboratory results codes to the LOINC standard for purposes of reporting and information exchange. Using the LOINC standard to exchange clinical data allows participants to achieve semantic interoperability with other HIN participants and in the future participants in the NHIN.

By taking advantage of mapping rather than using LOINC directly, participants ensure that all of their legacy data can continue to be useful. There is no need to discard legacy data because, as far as the individual facility is concerned, there are no changes to the codes that it has always used. Mapping allows participants to maintain their investments in their legacy systems and also allows them to achieve semantic interoperability with external systems. Data mapping relieves participants of the burden of vocabulary maintenance. Updates and changes to the standards are handled through HIN, so participants are assured of staying current with the latest version of standards without the need to maintain staff for vocabulary and standards maintenance. Because the data within HIN has been standardized and stored in structured format in the CDR, it is viewable in a consistent manner through the HIE Portal. Authorized users from within HIN and log into HIN and view the results, and they can also use decision support with the coded data.

#### **4.1.3** Patient Care Summary

ONC has indicated that patient care summary data will be made available to grantees at a later point. No updated or alternative measures are available.

#### **4.1.4** Public Health Reporting

HealthInfoNet enables automated laboratory result exchange for 30 of the 72 diseases mandated for public reporting by the State of Maine. HIN delivers the Public Health Information Network Management System (PHINMS) transport standard required by the Maine Center for Disease Control (MeCDC) to communicate automated laboratory test results to the public health information infrastructure. HealthInfoNet has been working in late 2013 to build capacity to support syndromic surveillance functions and as of December 30, 2013, HIN was planning to go live with syndromic surveillance in January 2014.

#### 5 SPECIALIZED INITIATIVES

Health organizations within Maine have been at the forefront of implementing targeted use of health information exchange. They use health information exchange as the foundation for their applications. Initiatives include the Beacon Community Grant, SAMHSA HIE Grant and HRSA VA connections grant. Integration of data-flow between provider and State systems include the integration of HIN and the State's automated laboratory reporting systems, the sharing between HIN and the state's IMMPACT 2- Web- based Immunization Information System. The State's Information Technology Office recently developed an on-line web based application for



providers to report special registry data directly to CDC, providing a single sign-on and a drop down list of the registries.

#### **5.1** Beacon Community Grant

The Bangor Beacon Community is one of 17 sites nationwide dedicated to advancing the adoption of electronic health records and expanding connections through health information exchange. Eastern Maine Healthcare System (EMHS) was awarded a Beacon Community Cooperative Agreement in April 2010 to support the Bangor Region of Maine. The objectives of the EMHS Beacon Community Cooperative Agreement are:

- To improve the management of chronic conditions through information exchange, telemedicine, medical home model, and patient self-management;
- Collaborate with public health and medical providers, to improve population health, with a focus on immunization compliance through information exchange and patient self-management;
- To improve cost effectiveness of the provision of care through technology investment and
  use, resulting in reduced duplicative procedures and decreased unnecessary emergency
  room visits and admissions.

EMHS has been a HIT leader since 1992, when investments in Genesis resulted in development of Electronic Medical Records as an innovative solution. In 2002 the "Together" project led the industry in connecting multiple hospitals to common clinical, billing, PACS and business systems. In 2009 EMHS became a beta site for the HIN demonstration phase. EMHS also serves on the HIN Board of Directors. A brief description of the activities undertaken by the Beacon Community for each of the three objectives is described below in regard to their relationship to HIE efforts by HIN and the OSC.

#### Improve Management of Chronic Conditions through HIE

Providers at Eastern Maine Medical Center (EMMC) were early adopters of the HIN HIE to support patient care. The Beacon project expanded the access to HIN to other members of the Bangor Beacon Community. The Bangor Beacon Community includes:

#### Inpatient sites:

- 1. Eastern Maine Medical Center (EMMC),
- 2. Saint Joseph Hospital; and
- 3. Acadia Hospital;

#### Outpatient sites:

1. EMMC PCP practices;



- 2. Penobscot Community Health Center (PCHC) PCP practices;
- 3. Saint Joseph Hospital PCP practices;
- 4. Home healthcare agencies (Eastern Maine Home Care, Saint Joseph homecare, Community Health Counseling Services; and
- 5. Northeast Cardiology Associates;

The purpose of this Beacon Community objective was to increase the number of providers with access to the HIE, describe the HIE infrastructure; describe characteristics of the implementation and technical requirements, and to document the barriers in creating the infrastructure and the barriers or limitations of the providers/staff adoption. This objective also demonstrated the HIE adoption in association to the Criteria for Meaningful Use.

#### Activities included:

- Obtain and set up appropriate hardware and software;
- Put in place updated information exchange and business associate agreements;
- Map CCD data tables to HIN model;
- Test and troubleshoot HIE;
- Document any barriers or limitations encountered in creating the information exchange infrastructure as well as methods employed to accommodate those barriers or limitations;
- Reporting: Reports of users, including new users will be developed by HIN. A survey to providers/users describing the adoption will be deployed at year 1, year 2, and year 3.
- Add new data elements as needed immunizations, secondary diagnoses.
- Provide CCD upon query back to EMHS and other Centricity users in the Beacon Community through HIN.

#### Improve Population Health through Immunization Compliance and HIE

Providers across the Beacon Community reported that the lack of coordinated care among continuum sites that are not within the same health system promote duplicated efforts. For example, providers reported not having adequate ties to patient immunizations administered by the State CDC and/or in hospital or other settings. Some patients did not receive their shots; others got duplicate immunizations. For this goal EMHS defined patients as those active adult patients older than 18 year of age from the EMMC, PCHC, and Saint Josephs Healthcare primary care physician practices who had at least one of the following diagnoses: Diabetes mellitus, Congestive Heart failure, Chronic Obstructive Pulmonary Disease, and Asthma.

HIN supported the exchange of immunization data through the statewide HIE by partnering and developing HL-7 interfacing with the Maine CDC on their Immpact II immunization registry project, as well as hospitals, pharmacies, and other organizations that provide immunization services.

#### Improving Cost Effectiveness:



The Bangor Beacon Community evaluated the effect of interoperable health information technology, including electronic health records (EHRs), health information exchange (HIE), secured messaging system and tele-homecare capabilities, to support improvements in health care quality, safety, efficiency, outcomes, and the initiatives leading to meaningful use definition. The Bangor Beacon Community also evaluated the integration of homecare services, and mental health care management into the Care Management model in several of the Bangor Beacon Community's primary care practices.

For the purpose of the program evaluation, Bangor Beacon Community patients (BBC patients) were defined as those active adult patients older than 18 year of age from the EMMC, PCHC, and SJH primary care physician practices who had at least one of the following diagnoses: Diabetes mellitus (DM), Congestive Heart failure (CHF), Chronic Obstructive Pulmonary Disease (COPD) and Asthma.

To improve health care cost effectiveness and efficiency through technology investment and use, HIN worked with the entire Beacon Community to provide bi-directional health information exchange capacity (including interfacing and parameter based launch capacity) that are in alignment with ONC sponsored NHIN Direct Project specifications.

This bi-directional health information exchange capacity allowed the information from the HIE to be used to improve treatment (right information at the right time) for all Beacon community providers. Moreover, these HIE activities allowed for discrete data exchange and data capture allows for EMMC and the Beacon community to measure and evaluate the effectiveness of all Beacon Community activities on utilization, cost, and quality.

#### 5.2 MaineCare Meaningful Use Program

As mentioned earlier in this Report, the MaineCare Meaningful Use Program has been integral in Maine's success with Health Information Technology. Maine is a leader in the number, per capita, and the funds that have been paid to providers who meet Meaningful Use. Past, present, and future activities include:

- Development and implementation of rules, policies and procedures, and system
  enhancements where needed, to the State's registration, attestation and payment systems for
  Eligible Professionals and Hospitals (if Medicaid only) for Meaningful Use reporting (as
  defined by CMS); quality and cost improvement measures, including the exchange, use, and
  reporting of health care data under MaineCare initiatives;
- Ongoing collaborative work with the State's CDC and Eligible Hospitals to conduct the necessary tests and interfaces to allow EHs to meet ELR MU reporting; and with Eligible Professionals and EHs to meet Stage 2 requirements for reporting of CDC health population reports for immunization, cancer, lead, and other special registries.
- Significant effort to provide outreach and education, stakeholder forums, and other efforts to educate MaineCare Members of their ability to obtain their personal health records electronically, and how to use this information to improve health outcomes and quality of care.



- Ongoing work to build common individual identifier (e.g., Master Client Index) technology tools in an integrated manner to allow for continuity of care for individual MaineCare Members and to aid in better understanding population health including linking Member information across Maine Departments such as Corrections and Education.
- Continue cooperative efforts to disassemble data silos in State systems for program offices to
  have access to data collected and managed commonly across DHHS to better serve clients,
  through continued communications among agencies with a coordinated focus on using
  existing systems and infrastructure rather than building redundant or less efficient systems.
- Continuing efforts to coordinate the clinical quality measures gathered by DHHS to ensure that CHIPRA, Meaningful Use, and all other clinical quality measures are coordinated to appropriately address populations with unique needs, such as children.
- Continuing initiatives to collect and disburse data in a standardized manner to promote the use of evidence-based protocols for clinical decisions.
- Continue participation in the efforts to integrate claims and clinical data which are key to improving population health and quality.
- Participate in new Medicaid programs such as Health Homes and Maine's SIM and IHOC grants to establish HIT and MU measures requirements, including use of the State's HIE and APCD clinical and claims data, to improve quality, costs, and outcomes.

#### **5.3 SAMHSA HIE Grant**

The integration of behavioral health and substance abuse information into electronic health records is critical in order to increase health care safety, quality, access and efficiency. Since 2004, Maine has been working on a number of initiatives to coordinate clinical information systems within the mental health and substance abuse provider community.

With the emergence of new health care payment reform efforts such as value-based purchasing and accountable care organizations, HIT facilitated care coordination has taken on new priority across the health care delivery system and behavioral health is at the forefront. Central to this strategy has been a longstanding priority in Maine to support the collaborative engagement of providers from the behavioral and physical health sector, and consumers, so that the use and deployment of HIT enhances care at the patient and provider level.

In January of 2012, the National Council for Behavioral Health Center for Integrated Health Solutions awarded a contract to HealthInfoNet as one of five State Designated Entities (SDEs) to lead the nation in developing effective ways for HIEs to improve the integration of behavioral health and general medical care using HIT. This project provided support for significant changes in Maine's HIT environment in order to make behavioral health and primary care integration the norm rather than the exception.

Three major collaborators were brought together to drive these efforts: HealthInfoNet, the statewide health information exchange (HIE) organization and Regional Extension Center, the Office of the State Coordinator for Health Information Technology, and the Hanley Center for Health Leadership. In addition, a broad group of behavioral health and primary care providers,



additional provider groups, and a wider range of representatives of the State mental health and substance abuse departments were convened and voluntarily participated in a number of workgroups that met over the calendar year of 2012.

The project was organized according to three primary action areas:

**Action Area 1:** Advancing the implementation of recommendations and the next phase of the multi-stakeholder Behavioral Health Information Technology Hanley Strategic Action Taskforce facilitated by the Daniel Hanley Center for Health Leadership in 2011.

**Action Area 2:** Providing access to the operational statewide HIE for providers with and without EHRs.

**Action Area 3:** Consumer-driven communications to assure that consumers understand how their health data is being exchanged and why.

#### **Outcomes**

While efforts continue, this project had significant impact:

- Across Maine, 20 behavioral health organizations/agencies were provided with the ability to access health information about their clients in the HIE and five collaborated on the ability to share protected mental health information through the HIE for improved delivery of care and coordination with other health care providers.
- Consumers and providers have the educational tools to support informed consent for consumers.
- Providers were provided implementation toolkits to support EHR implementation and connection to the HIE.
- Recommendations were made for a common set of data elements to standardize communication between health care providers.
- Strategies were developed to integrate behavioral health providers into the new emerging payment reform models in Maine.
- Maine's SIM grant includes a proposal to provide incentive payments to assist behavioral health providers in EHR adoption and implementation.

Despite these results, providers still face ongoing barriers and challenges to sharing behavioral health information for care coordination purposes. The cost of implementing EHRs and purchasing the interfaces to connect to the HIE, is still a considerable barrier for these providers. The cost not only includes the funds needed to buy the technology but also the time and resources required to educate staff that historically has a large knowledge gap around health care technology.

A majority of behavioral health organizations in Maine treat patients for both mental health and substance abuse issues. The issue of different standards for treating mental health information and substance abuse information under State and Federal law require complex processes of



separating mental health from substance abuse information to support HIE efforts. And the challenge of educating patients about the complexities around consent for both mental health and substance abuse also present ongoing challenges.

Recent efforts at the national level working with state agencies and HIEs to develop a consent mechanisms that recognize the benefits of data exchange and allows individual patients the right to determine how their personal health information is used, would greatly enhance the exchange of health information especially in relation to substance abuse information.

#### **5.4 HRSA VA Grant**

In September 2013, the Maine Center for Disease Control and Prevention (MECDC) and HIN were awarded a grant to improve care coordination for Maine's veterans. Awarded by the Health Research and Services Administration (HRSA), the funding is being used to support bidirectional connection between HIN and the Veteran's Administration. The VA Maine Healthcare System is comprised of the medical center located in Augusta and 9 outpatient clinics. Projections from the VA Office of Rural Health show that 12.8% of Maine residents are veterans, the fifth highest per capita population in the country. Because Maine is a large rural state, access to VA facilities can be challenging and veterans must also seek care from their community's private hospitals, mental health providers, community health centers and physician practices. These issues make it difficult for both a veteran's VA and private providers to coordinate their care, something critical to improving quality and reducing costs. Whereas many of Maine's private providers are connected to Maine's HIE, in the treatment of veterans, the care they receive in Maine's VA facilities has not been accessible through the HIE and VA providers are unable to access information from private providers using the system. This means providers are often unaware of services their patients receive outside the VA and in private health care systems. As an integral part of this project, veterans will be provided access to their HIN record from within their My HealtheVet portal. As of January 2014, HIN and the VA have signed the Data Use and Reciprocal Support Agreement (DURSA) and has had HealtheWay approve its application, which enables the beginning of the onboarding process, the start of validation testing to be recognized as an eHealth Exchange participant and paves the way to officially begin testing VA data exchange. This project will further expand the possibilities for patient data collection and sharing in the State of Maine.

#### **5.5** Maine State Innovation Model (SIM)

The state of Maine was selected by the Center for Medicare and Medicaid Innovation (CMMI) as one of six states in the nation to receive a State Innovation Model (SIM) award. This federal award is designed to test a set of bold changes to align improvement efforts in the state and transform health care delivery and payment systems. This 3-year award was made to the Governor's Office and is led by the Maine Department of Health and Human Services and MaineCare, in partnership with providers, consumers, and several organizations involved in leading changes in Maine's health care system including the Maine Health Management Coalition, HIN, and Maine Quality Counts. The goal for the Maine SIM initiative is to achieve



the "Triple Aim" of improvement –improve health care quality and population health; improve patient experience of care, and reduce health care costs.

The SIM grant includes several key partners, one of whom is HIN. HIN will be leveraging key investments in health information exchange for the testing of critical and innovative technology services to support statewide implementation of health reform. Several of the activities that support health information exchange and that can be implemented under the grant to provide the delivery system improvements contemplated by SIM include:

- Providing automated notifications to MaineCare care management staff as well as
  participating provider care managers when MaineCare patients are admitted to Emergency
  Departments and Inpatient Settings.
- Continuing HIN's Behavioral Health HIT efforts by subsidizing HIE subscription fees for
  participating behavioral health providers, supporting HINs technical needs in managing the
  opt-in model and providing EHR adoption reimbursement to Behavioral Health Providers to
  support their purchase and implementation of EHRs and connect to HIN.
- Developing and deploying the "blue button" technology standards to allow patients to access their statewide HIE record data through their provider-based personal health portals
- Developing a MaineCare dashboard to support advanced clinical and administrative analytics for the MaineCare program using clinical data from the HIE and claims data from the Medicaid Management Information System (MMIS).

#### **5.6** IHOC

The OSC, MaineCare, and the Maine Center for Disease Control (MeCDC) are coordinating efforts on a Children's Health Insurance Plan Reauthorization Act (CHIPRA) grant in conjunction with Vermont. The shared grant was awarded to "Improve Health Outcomes for Children" (IHOC) enrolled in the State Children's Health Program (CHIP). This grant addresses the needs of the State's children in regard to measuring quality of care and health outcomes and supporting the needs of foster children as they encounter the health system. The grant supports the development and testing of the automation of new tools for early and periodic screening, diagnosis, and treatment (EPSDT) data, foster care coordination and other activities supporting better care for children. The State's IHOC implementation team is partnering with HIN to build automated quality measures in the HIE Data Warehouse and in 2014 will be piloting a means by which children enrolled in the foster care program will have their comprehensive health assessments uploaded and made available to primary care providers through the HIE, and population level reports for stakeholders.

#### **5.7 IMMPACT 2**

Maine's web-based Immunization Information System is a tool to ensure effective public health strategies through the use of secure, accurate, and accessible information. The registry promotes client and vaccination management functions for a majority of pediatric providers statewide and



serves as a resource application for MaineCare. IMMPACT2 tracks and reports provider vaccination administration, vaccine inventories, and child Bright Futures preventive health visits; provides health tracking and quality assurance tools for clinician use; and provides internet access to current immunization trends, standards, and health information. IMMPACT2 contains detailed immunization records for over half of the children in Maine. These records are electronic, portable, and patient-centric. Providers have the option of reporting their immunization information directly to the CDC or to the HIE which provides a feed to MECDC.

#### 5.8 MeCDC Special Registries program

In December 2013, with the advent of Meaningful Use Stage 2, the OSC, the State's Information Technology Organization, and CDC worked together to develop a single on-line web based reporting system for providers to submit special registry data. In 2014, the OSC and CDC plan to include a diabetes registry in this system.

#### **5.9** Regional Extension Center

HealthInfoNet serves as the Maine Regional Extension Center (MEREC) providing support in the adoption and use of certified EHRs and e-prescribing technologies. The REC is expected to be repurposed in April 2014, when the federal REC program funding ceases.

#### **6** CONSUMER ENGAGEMENT

Central to ONC's mission is the goal of empowering all Americans to improve their health and health care through health IT. By providing the support of e-health tools, individuals and families can take action and gain control over their health and by increasing individuals' access to their own health information, consumers can become full partners in their health care.

Individual consumers and/or representatives of consumer groups have been actively engaged in advisory groups focusing on the advancement of health information exchange in Maine. In March of 2009, the Health Information Technology Steering Committee (HITSC) was convened by the Maine Governor's Office of Health Policy and Finance (GOHPF). This committee was brought together to collaboratively develop a statewide strategic plan for HIE and HIT and is made up of providers, consumers, advocacy groups, private entities, government leaders, public agencies and other stakeholders. Consumer engagement continues to be an agenda item that is covered at the monthly HITSC meetings as part of the continual improvement efforts.

The MaineCare Meaningful Use Program State Medicaid Health Plan (SMHP) development included State-wide public outreach and forums. Four listening sessions, comprised of more than 80 consumer stakeholders were held to assess the current state of health information technology, identify gaps, and build a road map for the future. Draft plans were issued for public comment and were shared with consumer organizations such as the MaineCare Consumer



Advisory Group, Maine HIV alliance, Maine Disability Right's Foundation, Maine's Elderly Rights Foundation, Behavioral Health Alliance, Children's Advocacy Groups, Maine State legislative members, the Maine Health Data Organization, Maine Health Management Coalition, Maine Quality Counts, Long Term Care organizations, Maine Provider Association and Maine Hospital Association, and others. Results of these efforts were key to the State's successful implementation of its Meaningful Use program.

HealthInfoNet has a Consumer Advisory Committee, which includes citizens, consumer advocates, consumer organizations, legal experts, health educators, privacy officers, public health professionals, and interested parties with experience and expertise in consumer participation and privacy protection in health information technology systems. The group has consistently advised the HIN Board of Directors on HIN's consent model, privacy and security protections for consumers and HealthInfoNet's strategy to allow consumers to conveniently access their own medical information.

This committee has been instrumental in the development of the opt-out provision for patient participation in HIN for general medical information and the opt-in provision for mental health and HIV information. Over 2014 HIN will be working closely with the Consumer Advisory Committee to shape consumer research and to define standards for data descriptions in the CCD to be shared with consumers as part of the SIM project.

The Maine Regional Extension Center (MEREC), operated by HealthInfoNet provides assistance to providers in selecting, adopting and using EHRs in an effort to improve patient care. The MEREC also had an agreement for services to be performed by Maine Quality Counts, a statewide coalition committed to transforming health and health care for the people of Maine by leading, collaborating, and aligning improvement efforts. Under the SIM grant, the State is partnering with Maine Quality Counts to continue to provide quality improvement expertise, guidance, and support for linking EHR adoption with clinical improvement.

#### **7** SUSTAINABILITY

Maine has developed a strong foundation to achieve long-term sustainability in health information exchange. In approaching sustainability, both required sustainability steps as detailed in ONC-HIE-PIN-002 were supported:

- 1. In coordination with state Medicaid and health reform efforts, Grantees should work to increase demand for information and the business case for exchange through leadership action and the use of policy and purchasing levers.
- 2. Grantees should assure the business viability of any services they are directly providing ensuring that the services deliver value, are in demand and are affordable...fill gaps in the market and are easily adopted by users and providers.

Under the leadership of OSC, HIN and various oversight committees, a wide range of resources were brought to bear in the support of the development of health information exchange. As



described, in addition to the Cooperative Agreement, these include Beacon Community Grant, SAMHSA HIE Grant, HRSA VA Connections grant, Improve Health Outcomes for Children (IHOC) Grant, Healthcare Connect Fund, employment of HIT consultant-graduates, and the CMMI State Innovation Grant.

These grants not only brought additional resources to support health information exchange, but they also (1) increased the value propositions and business case associated exchange (2) supported payment reform initiatives and (3) provided learning experiences for stakeholders in Maine and across the nation.

In ensuring the business viability of services offered, central to HIN's strategy has been a long standing priority to support the collaborative engagement of providers from both the behavioral and physical health sectors, and of consumers, so the use and level of deployment of HIT enhances care at the patient and provider level. This integrated vision has guided HIN's organizational development.

The demand for services is reflected in the fact that 35 of 38 hospitals in Maine are interconnected with HIN, and the other three are in the onboarding process. Almost 1,800 Maine clinicians and support staff have active accounts, and 88% of individuals in the State have a HIN receives more than 3.5 million inbound messages per week.

In terms of affordability of services, since almost all clinical health information exchange occurs through HIN and the breadth of the network is so broad, there is the opportunity to take advantage of economies of scale and achieve lower marginal costs in both network operations and services offered.

Relative to the longer-term sustainability of health information exchange in Maine, as indicated earlier in this assessment, HIN is one of the few HIEs in the nation that has a subscription model in place. This provides a funding foundation. However, additional revenues will be needed as health information exchange in Maine grows. Future revenue sources can come from enhanced value propositions such as new value-added services like analytics and notifications or from richer content, such as imaging. Additional grant and contract funding could also provide a source of future revenues.

To this point, much of the clinical health information exchange in Maine has focused on providers, while the claims data focuses on payers. There is recognition that we must "integrate" claims and clinical data to achieve greater improvements in quality and efficiency of health care. This necessitates finding the point of convergence and value between providers and payers and patients. In addition to advancing safety, quality, and cost efficiency in the care of individual patients and populations, payment reform and the associated shift to population-based reimbursement, is significantly changing the value propositions for health information exchange.

To this end, Maine plans to leverage the spectrum of resources and funding that produce a truly integrated health information exchange strategy. For example:



- 1. The success of the MaineCare Meaningful Use Program to have all eligible hospitals in the State and over 2,000 professionals participate in the incentive payment program will be further leveraged to expand the exchange of health information. Getting all eligible professionals to use EHRs and participate in an exchange is key factor. Maine's significant outreach efforts will continue to expand the use of EHRs and exchange. Much of the success of the MaineCare Meaningful Use Program can be attributed to our federal CMS partners who approved funding for the development and implementation of Maine's Program.
- 2. The OSC and the State's ConnectME broadband authority are leading the efforts for a consortium of health care providers ranging from hospitals, ambulatory practices, mental health agencies and post-acute care facilities to apply for the FCC Healthcare Connect Fund. This expands the use of E H Rs and exchange of health data to providers that were not of the types deemed eligible under the Meaningful Use Program, under the recognition that to have truly integrated care and systems, it is optimal to have all providers participate.
- 3. As mentioned earlier in this report, the importance of integrating clinical and claims (administrative) data are key to improving population health and quality outcomes. A repurposed Office of the State Coordinator for HIT, along with the MaineCare Meaningful Use Program and stakeholders, will participate in future endeavors to further enhance the linking and exchanging of all critical data.
- 4. Maine's OSC and MaineCare Meaningful Use Program, with federal funding under the OSC program, executed a cooperative agreement to hire six graduates of the Kennebec Valley Community College. As a new program, despite the success that Maine has seen from its streamlined reporting processes, Maine's providers are challenged by exporting data from EHRs for Meaningful Use purposes. The graduates assisted 900 eligible professionals to meet attestation and reporting requirements under the Meaningful Use Program. Providers who are assisted with meeting Meaningful Use, but not yet participants in the HIE, were referred to the HIE for education on the benefits of the exchange of health care data and assistance in participating in the HIE. These projects will enhance State HIT efforts, including the SIM grant goals and objectives, of having real-time data to improve health care delivery and patient experience. (See <a href="http://www.maine.gov/hit/documents/FinalReportDHHS-KVCCventure8.2013-2.2014.docx.">http://www.maine.gov/hit/documents/FinalReportDHHS-KVCCventure8.2013-2.2014.docx.</a>)
- 5. As mentioned earlier in this report, the recent Meaningful Use program provider survey will assist Maine determine the use of EHRs and Internet capacity as a baseline to identify gaps and potential funding for providers to meet Stage 2 Meaningful Use requirements and participate in emerging tele-health initiatives.
- 6. To help inform Maine's emerging health reform programs such as the SIM grant, Health Homes, and Accountable Communities, HIT projects are being planned and designed using the integrated model approach. Recognizing that all sources of funds, private and public, and all stakeholders, must come together to build a truly integrated health care world. For example, Maine has initiated a discussion with CMS and plans to work with all stakeholders to submit a request under the Meaningful Use Program for an appropriate allocation of funding for specialty registry reporting to the CDC required under Stage 2 Meaningful Use which will provide analytic tools for diseases such as cancer and diabetes, which will further increase the use of the HIE statewide; and a request for an allocation of funding under the Meaningful Use Program for enhancing the Statewide HIE, which will dovetail well with the SIM goals and will enable Maine providers to meet important programmatic standards that will help inform mechanisms to reduce costs and improve quality of care.



#### 8 CONCLUSION

In summary, during the term of the Cooperative Agreement Grant stakeholders across Maine have aggressively pursued funding to support health information exchange. These resources have been used through the leadership of OSC in a coordinated fashion to support the ONC objectives of (1) creating demand for exchange (2) support advance care transformation models and payment reform initiatives and (3) foster systemic changes to support health information exchange. The fact that HIN is one of the few HIEs to implement a subscription model combined with future potential funding sources, including those which incorporate payers, provides a basis for long term sustainability of health information exchange in Maine.

Maine wishes to thank its federal partners for the opportunities provided through the federal funding and Cooperative Agreement. The State looks forward to working with all stakeholders to continue Health Information Technology efforts to further improve population health and quality of care.